

A. Project Title and Project Purpose Statement

The Leadville Sustainable Homes Project will reduce exposure to toxins in Lake County homes by integrating healthy homes principles with comprehensive home assessments. The project seeks to create healthier conditions in mobile home communities and dilapidated housing in Leadville through healthy home and energy efficiency assessments, healthy home educator trainings, participant education, and community presentations. Toxic substances such as mold, radon, lead, and carbon monoxide will be reduced through identification and training, and substandard housing will be addressed by helping participants access emergency repair funds, weatherization programs, and rebates from the county government. Thirty substandard homes will be improved using a house-as-system approach that increases the quality of life for residents by reducing health risks, increasing energy efficiency, and empowering participants to gain better agency over their living conditions. This will create a more resilient housing stock that supports human health and meets the demands of a challenging climate.

Leadville and Lake County, Colorado (80461) are located in the heart of the Rocky Mountains. Historically a mining town, Leadville continues to recover from the loss of most mining jobs during the 1980's, and still grapples with the stigma of being a Superfund site. Largely a bedroom community for service workers to wealthier locales, Leadville struggles to achieve a sustainable life for its residents. With lower than average incomes, a large immigrant population, and fewer services than surrounding communities, Leadville experiences significant problems that harm the quality of life for many residents. Poor quality housing contributes to health problems and disproportionately impacts the quality of life for the most vulnerable in this community.

This project will address the Toxic Substances Control Act, Section 10(a) by conducting public education, training, and studies on toxic substances. Toxic substances are of great concern here as they harm the health and environmental sustainability of the community. Lead poisoning, exposure to carbon monoxide, mold, and radon are costly public health problems with roots in the built environment. This project will increase awareness of these issues in the community and provide low-cost solutions to reduce the risk of exposure to toxic substances in homes.

As a result of this project, homes will sustain healthier outcomes for low-income and Latino residents. Integrating healthy homes principles with energy efficiency and existing maintenance and repair programs will assist families with making important home improvements and with changing behavior. Exposure to toxic substances will be reduced in thirty homes and the community will gain more awareness and solutions to problems of environmental health. As a result of this project, health outcomes for vulnerable populations will improve.

B. Environmental, Public Health and Community Climate Resiliency and information about the Affected Community

According to the Colorado Health Foundation, Latinos in Colorado have lower incomes and higher rates of disease, less access to health care, and multiple health disparities. Health equity is a priority in Lake County, and environmental health has been identified by a 2012 Community Risk Assessment as an issue here. One way in which health outcomes are impacted is the state of housing in Lake County. Census data shows that mobile homes and older structures constitute 70% of the housing stock in Lake

County. Substandard housing such as mobile homes and dilapidated structures commonly contain higher levels of toxic substances such as lead and asbestos, and are less energy efficient and poorly maintained compared with newer homes. These homes cannot handle high heating needs, snow loads, and the additional maintenance that comes with extreme snow and rain events. Leaky roofs and poorly maintained homes increase exposure to carbon monoxide, lead, mold, and other toxic substances. One family that participated in our energy program was forced to abandon their home this year due to a leaky roof caused by large snow loads and subsequent mold infestation from water damage. Without the resources to identify and repair structural problems with their homes, many families are at risk for health problems. Furthermore, a lack of awareness about health hazards in the home contributes to higher level of exposure to toxins from household cleaning products, lead dust, and other hazardous materials.

Recent efforts to improve housing in Lake County have been driven by an emphasis on energy efficiency and safety. This has improved homes by reducing energy consumption and addressing the most glaring safety issues. However, efficiency efforts have also revealed health issues in many, if not most, of the low-income homes that this organization has visited. Common issues identified during this organization work include:

- **Mold.** Mold is a common feature of mobile homes, which have poorly insulated walls and attract condensation. Leaking plumbing and roofs also contribute to the presence of mold. Repairing homes and ventilating them properly can prevent mold, but the causes and prevention of mold are not well understood by participants in our energy efficiency program.

- **Carbon Monoxide:** Excessive carbon monoxide over EPA limits of 9 PPM was found in over 30% of homes we visited in 2014. Not a single mobile home we visited had a working carbon monoxide alarm, and poor familiarity with carbon monoxide was apparent. Carbon monoxide is dangerous gas that is often misidentified in emergency rooms and contributes to health inequity.

- **Lead:** Many older homes contain lead paint. The contractor community in Lake County is exposed to high levels of lead and can bring home lead dust. In Lake County, average blood lead in children ranges from 2% to 2.8% (2011-12 data) compared to .64% nationally. Lead from Mexican candy has also been found in Lake County.

- **Radon:** According to report from the Colorado Department of Health, populations less likely to know about radon and test for it include Hispanics, younger people, and people with lower incomes and lower levels of education. Radon has been found in 47% of homes tested in Lake County.

- **Household hazardous waste:** At a 2014 waste event sponsored by this organization in 2014, over 50,000 lbs of household hazardous waste were collected. Because prior collection did not exist, many people have stockpiled dangerous substances in their homes.

Lake County's percentage of Latino or Hispanic residents is almost twice the state rate at 39%, and educational attainment lags behind the state. Median household income is 72.8% of the state at \$41,103. Low-income and Latino residents face a disproportionately poor quality of life as result of inadequate housing, limited access to resources, lack of health insurance and lower educational attainment. According to a Public Health Assessment from 2012, Lake County ranks 58 of 59 in health outcomes in

Colorado. Vulnerable populations in Lake County are clearly at risk for health inequities as a result of substandard housing and toxic substances.

The project will assist a community that faces many barriers to improving their quality of life. Occupants of mobile homes in three mobile parks as well as individuals living in dilapidated housing in Leadville will benefit from this project. By addressing health related problems in the housing stock, the project will increase health outcomes “upstream” of healthcare. The project will reduce instances of toxic exposure in the community, educate participants and the community on strategies to maintain a healthy home, and provide needed bilingual support to families attempting to access repair funds, weatherization, and rebates.

C. Organization’s Historical Connection to the Affected Community

The Cloud City Conservation Center (C4) was created in 2013 to address environmental sustainability in the areas of energy conservation, renewable energy, and toxicity and waste reduction. Though C4 is a relatively young organization, it has established a track record of success in Lake County. In the first two years of operation, the organization has raised over \$468,100 in grants and partnerships to benefit the environmental health of Lake County.

2014 program successes include:

- The **Green Schools Initiative**: In 2013 and 2014, C4 worked with the Lake County School District to bring recycling collection to every school and recycling workshops to every classroom, increasing recycling rates by 25%, or 25,000 pounds.
- C4 **Zero Waste Events** recycled and composted 40,000 pounds in 2014.
- The new **Household Hazards Waste** program diverted an additional 50,000 pounds of toxic material from the landfill.
- The new 500 kW **Lake County Solar Garden** more than doubled the County’s clean energy production.
- **Residential Energy Efficiency Programs** saved money and reduced carbon emissions in 80 homes.
- C4’s **Energy Justice Initiative**, funded by the EPA, successfully improved energy efficiency in 30 low-income homes and established key relationships with the affected community.

The Environmental Justice project helped develop and secure the trust of the affected community by partnering with a Latina women’s organization and by visiting homes and delivering solutions to energy efficiency problems. Participating homes improved household energy bills by an average of 9%. During the course of this project, it became apparent that energy efficiency is only one detrimental quality of substandard housing in Lake County, and that the environmental health risks in these homes pose a threat to the well being of the occupants. Of thirty homes that were inspected, none had carbon monoxide alarms despite ambient carbon monoxide exceeding recommended levels in many instances. Evidence of mold on the interior walls of homes was discovered in over half of the mobile homes we visited. Our organization was able to address the most threatening problems (namely carbon monoxide) by leveraging local rebates to fix broken

furnaces and vent pipes. The project also resulted in increased applications to weatherization programs by helping participants overcome language and administrative barriers. This increased trust from the affected community, and positioned our organization as an effective ally to combat environmental health risks in homes. The affected population, our local governmental and health agencies, and family organizations agree that environmental health inequities should be addressed.

One result of our work with the affected community is an increased focus by local government and health organizations on substandard housing issues. The capacity to address low-income energy efficiency continues with the support of a Build-A-Generation Leadville mini-grant for energy efficiency and safety, and ongoing support from Lake County government. Partnering with the local Public Health Agency has increased the ability to test for radon and lead in the community, and leveraged additional resources to support environmental health work in homes.

Despite increased capacity in the above areas, low-income individuals have requested additional assistance to address ongoing issues with their homes. From roofs that are caving in to leaking plumbing and dangerous heating equipment, the condition of the homes in this community is far from equitable or healthy.

D. Project Description

i) The local environmental, public health, and climate resiliency results the project seeks to achieve are the following:

- Increase awareness about toxic substances in Lake County homes most at risk for exposure.
- Reduce the presence of toxic substances in thirty homes. Substances will be identified and strategies to reduce or eliminate them will be delivered in a culturally sensitive manner.
- Increase the health outcomes of program participants. Households will report fewer hospitalizations from respiratory infections and an overall improvement in general welfare.
- Empower thirty families to take control over the quality of their homes.
- Increase access to additional resources by educating individuals about existing programs.

ii) The project will achieve these results by conducting the following activities over the course of one year:.

- Deliver four presentations to four local groups in Lake County about healthy home issues.
- Assess thirty homes in Lake County for toxic substances such as mold, lead, radon, carbon monoxide, and household hazardous waste.
- Train six healthy homes educators from the affected community to conduct healthy homes assessments and to communicate solutions to residents.
- Provide support to thirty families to address maintenance and repair issues by offering rebates, healthy homes coaching and help to access resources such as weatherization, emergency repair funds, and qualified professionals.
- Collect and map data to inform stakeholders about the spatial, geographical, and cultural distribution of toxic substances in Lake County.

iii) The efforts of our organization will increase the community's capacity to address toxic substances by:

- Developing local healthy homes educators from the affected community to conduct home assessments in their own homes and neighborhoods.
- Working directly with families to implement healthy homes principles in their homes.
- Disseminating information about additional resources available to improve homes such as weatherization, emergency repair funds, and remediation professionals.
- Prompting participants to take action to address toxic substances, such as remediating homes for lead or radon, or testing children for elevated blood levels.
- Providing coaching to support program participants who wish to take further action such as repairing leaky roofs or improving the energy efficiency and safety of their homes.

iv) This project will address the Toxic Substances Control Act, Section 10(a) by conducting public education, training, and studies on toxic substances. The following activities are authorized by the Toxic Substances Control Act and will be implemented by this program:

- Public education will be delivered in the form of presentations to the Women's Empowerment and other interested community groups, newspaper articles, and a healthy homes marketing campaign.
- Individual households will receive education in the form of healthy home assessments that will identify sources of toxins found in the home.
- Healthy homes educators will be trained to conduct healthy home assessments and these volunteers will educate program participants to identify and eliminate toxic substances in their home.
- Data about the types and locations of toxic substances in homes and neighborhoods will be collected and the results will be studied and analyzed for further benefit to the public health office and community stakeholders.
- Research will take the form of identifying and spatially mapping toxic substances by neighborhood in GIS layers.

How we will work with our partners to address toxic substances in homes.

v) The Cloud City Conservation Center's partners on this project will assume the following roles in addressing toxic substances in low-income and Latino homes:

- **The Public Health Agency** works to reduce blood lead levels in children through free screenings and assistance with remediation. This office will provide technical assistance to our organization about environmental hazards, remediation, and public health implications of project findings. The Agency will also disseminate information about the project and support efforts to collect data about toxic substances. The Agency will also offer free lead screenings to the children of program participants and conduct in-depth lead assessments where necessary. Cloud City Conservation Center and the Office of Environmental Health currently collaborate on radon and lead issues in Lake County, and have developed a relationship to support environmental health in Lake County.
- **Build-A-Generation Leadville** Their knowledge and expertise about the health of Lake County residents is critical to the design of this project, and in turn the results of this project will contribute to their ongoing assessment of community needs. Build-A-Generation will disseminate information about toxic substances in their annual risk assessment for the community and share information about the project in their office and

in their community engagement process. They have committed to supporting basic energy efficiency and healthy homes items such as carbon monoxide alarms and energy saving kits through their mini-grant program.

• **The Women's Empowerment Group** is comprised of Latina women in the Mountain View mobile home community who are actively working to create a better life for themselves, their families, and their community. Their involvement has been critical to the success of previous EPA funded programs. The group has requested additional resources to help improve their homes and quality of life. The relationship and trust developed with this group will be invaluable in working with the Latino community. The Cloud City Conservation Center and the Women's Empowerment Group have an ongoing relationship that is sustained by common goals. The Women's Empowerment Group will host presentations and members of the group will participate and help recruit participants into the program. Women from the group will be trained as healthy homes educators in order to improve the quality of life for their community. The Group will act as a liaison to the Latino community and to the mobile home communities in which they live.

E. Organizational Capacity and Programmatic Capability

i) The Cloud City Conservation Center has the following accounting, administration and reporting systems in place to appropriately manage, expend, and account for Federal Funds:

- C4's Executive Director approves program budgets and ensures internal monthly tracking and reporting.
- *C4 receives ongoing support and oversight from a diverse Board of Directors.* Organizational budget and cash flow are presented to the board by the finance officer and approved quarterly.
- Strategic planning in December 2013 identified Low Income health and energy efficiency as two of the organization's top priorities in the next three years.
- C4 has established diverse funding streams for on-going programs, which include fee-for-service, government and private grants, individual and corporate donations, and ongoing funding from Lake County Government.
- Accounting and tracking systems ensure accurate record keeping and reporting. *Quick Books* is used for cost expenditure and account tracking. An organizational calendar indicates all grant and internal reporting timelines. Grant awards are entered into a database that includes timeline and procedures for reporting deliverables.

ii) The Cloud City Conservation Center has successfully managed many projects in the past, including an EPA Environmental Justice Small Grant. This project was successfully managed by:

- Carefully tracking project activities, outputs, and outcomes in the project metric.
- Working with the Grant Officer to make modify the project and budget as necessary to achieve the proposed outcomes
- Ensuring accountability of staff members for meeting project goals.
- Collaborating with project partners to achieve results.

iii) The Project Manager will be in charge of project management and will be accountable to the Executive Director and the Board of Directors. The Executive Director will provide administrative, leadership and outreach support to ensure

deliverables are met. The Project Manager will submit a mid-project report at 6 months and a final report with-in 90 days of project completion that will include:

- Progress report on all deliverables in the Logic Model.
- Testimonials, pictures and all media mentions.
- Financial accounting of grant expenses by line item or as requested by the EPA.

iv) The organization benefits from the extensive experience in grant and project management. The Executive Director has successfully managed over 2 million dollars in grant contracts in the past 5 years. Notable grant-funded projects include Lake County Recycling Infrastructure (\$200,000, 2014), the Green Schools Initiative (\$60,000, 2014), and the Main Street Energy Efficiency Program (\$30,000, 2013).

- The Cloud City Conservation Center has managed an EPA grant in the past and successfully met financial and reporting requirements for this grant. Mr. Millard managed the grant. It was for \$28,985 and reporting was completed in November of 2014. The Project Officer for this grant was April Nowak.

F. Qualifications of the Project Manager

The PM, Cameron Millard, holds a BA in Spanish from Amherst College, Amherst, Mass. and a MA in Environmental Leadership from Naropa University, Boulder, Colorado. Cameron also holds multiple certifications from the Building Performance Institute, a nationally recognized building science accreditation organization. Cameron's certifications include Building Analyst and Multi-Family Building Analyst as well as Radon Certifications.

For his Master's Thesis, Mr. Millard conducted an Applied Leadership Project in cooperation with the Lake County Energy Advisory Group. The thesis, entitled *Towards a Just and Sustainable Energy Environment in Lake County*, examined the disparity in energy consumption among the residents of Lake County. Mr. Millard has lived in Lake County since 2005 and is deeply engaged with the community. His activities include mentoring of youths, sitting on the Lake County Energy Advisory Group, teaching in a Bachelor's of Sustainability Studies program at the community college, and conducting energy-efficiency and outreach work as Energy Programs Director for the Cloud City Conservation Center. Mr. Millard has successfully completed over 160 residential energy audits in the past two years, and has managed an EPA grant to increase energy efficiency among environmental justice populations in Lake County.

G. Past Performance in Reporting on Outputs and Outcomes

Provide the following information:

1. EPA Environmental Justice Small Grant, ID: EQ96818301. Project Title: Energy Justice Initiative. Grant Officer: April Nowak. Point of Contact: Sheritta W. Taylor. This EPA grant funded project was successfully completed and reported in November of 2014. A six month and one year project report was satisfactorily submitted to the EPA. Project outputs and outcomes achieved the desired result through successfully improving energy efficiency in 30 low-income and Latino homes.

H. Quality Assurance Project Plan (QAPP) Information

The project will document and analyze the distribution of toxic substances discovered in thirty homes in Lake County. This will contribute to Public Health data regarding types and locations of toxic substances in Lake County homes, such as radon,

lead and mold. The use of GIS mapping will assist with this data collection. Maps will be created by Colorado Mountain College's Natural Resource Management program.